PROC. BIOL. SOC. WASH.
95(4), 1982, pp. 766–771

DESCRIPTION OF A NEW CYPRIDOPSINE GENUS (CRUSTACEA: OSTRACODA) FROM CAMPBELL ISLAND, WITH A KEY TO THE CYPRIDOPSINAE

K. G. McKenzie

Abstract.—*Austrocypridopsis*, a new genus of cypridopsine ostracodes with the type-species *Austrocypridopsis terrilli* n.sp. is described from Campbell Island. A key to Cypridosinae is provided, and the subfamily Pseudocyprettinae is designated as new.

As shown by Smith and Sayers (1971, Table II) no Ostracoda have been recorded previously from Campbell Island; and only one ostracode species *Cypretta* sp. has been recorded from nearby Macquarie Island (Lofthouse 1967). Nevertheless, some eight species of continental Ostracoda are known from the Antarctic mainland and from sub-Antarctic islands. Of these eight species, only two occur at more than a single locality: *Ilyodromus kerguelensis* Müller, 1908, is recorded from four sub-Antarctic islands in the Southern Ocean; and *Notiocypridopsis frigogena* (Graf, 1931) occurs on South Georgia and Signy Island (Smith and Sayers, 1971). The present record increases this number to nine species and necessitates the description of a new cypridopsine genus.

Material

The material was collected by Mr. P. Terrill, of the Australian Museum, on a saddle between Mount Azimuth and Mount Fizean, Campbell Island, among plants and sediment from the headwaters of a small stream flowing north, at an altitude of 400 m. The collection date was 6 January 1980.

A total of 9 specimens was collected, comprising 5 adult females, 1 juvenile (A-1) female, 1 empty female left valve, 1 adult male and 1 juvenile (A-1) male. All the specimens have been deposited in the Australian Museum, some as dissection slides. The Accession Number of this collection is P 30226; Holotype (male) is AM P31528; Paratype (female) is AM P 31527; remaining Paratypes are AM P30266.

Cypridopsidae Kaufmann 1900
Cypridopsinae Kaufmann 1900
Austrocypridopsis, new genus

Etymology.—A combination of *auster* (L.) = south, and the generic suffix—*Cypridopsis*.

Diagnosis.—Resembling other cypridopsines in that both segments of the maxillule palp are elongate but differing from them in: the subrectangular carapace shape (in lateral view); the possession of reduced "natatory" bristles on the antennae; the absence of an epipod on the maxilla (P1); and in the relatively powerful (for a cypridopsine) furca. Both sexes known.

Type-species.—*Austrocypridopsis terrilli*, new species.

Discussion.—At first sight this genus appears to be a candonid because of its subrectangular shape which is unusual among cypridopsines. However, when the valves are examined in detail, the muscle scars are observed to have the characteristic cypridopsid pattern. Further, the furca, while unusually well developed for a cypridopsine, is definitely non-candonid. Finally, candonids are characterised by the absence of "natatory" bristles on the antennae, while in the new genus reduced "natatory" bristles are clearly present.

In its subrectangular shape, the new genus also resembles the genus *Callistocypris* Schornikov, 1980, described by its author as the type-genus of a new cypridopsid subfamily. But, the adductor muscle scar pattern of Callistocypridinae is unique among cypridopsids (Schornikov 1980, Figs. 1, 2), consisting of six scars arranged biserially (four anterior, two posterior) whereas in *Austrocypridopsis* the adductor muscle scars are four in number (three anterior and one (divided) posterior). Further, the two mandibular scars are proportionately larger in *Austrocypridopsis* than in the two known genera of Callistocypridinae (R. H. Victor personal communication, July 1981, has a second callistocypridine genus, from container habitats in the Pacific islands).

The Diagnosis indicates the characters which distinguish this genus from other cypridopsine genera. Apart from the subrectangular shape, which is distinctive enough to isolate this genus immediately from *Cypridopsis* (subovate), *Sarscypridopsis* and *Plesiocypridopsis* (subquadrate), *Cavernocypris* (subtriangular, *Notiocypridopsis* (subtrapezoid), and *Kapcypridopsis* (subreniform); the furca is much more powerful, with a stronger terminal claw and broader proximal part than in these genera. It shares the reduced "natatory" bristles of the antenna with *Cavernocypris* but that genus is so adapted for existence in (subsurface) cave systems whereas *Austrocypridopsis* is part of the surface benthos. Some other cypridopsine genera are characterized by well-developed antennal natatory bristles and are good swimmers. In any case, *Austrocypridopsis* differs markedly from *Cavernocypris* because whereas a maxillar epipod is absent in the former it is clearly present in *Cavernocypris* species although the number of Strahlen is less than normal, varying from 2–5 (Hartmann 1964; McKenzie 1972). Further, the furca in *Cavernocypris* is either altogether lacking or much reduced (Hartmann 1964; McKenzie 1972) whereas it is exceptionally powerful in *Austrocypridopsis,* which is thereby well adapted for crawling actively over the substrate.

Using these characters—subrectangular shape, reduced antennal "natatory" bristles, absent maxillar epipod, and relatively powerful furca—it is easy to key out *Austrocypridopsis* from the previously described cypridopsine genera.

Key to Genera of the Subfamily Cypridopsinae[1]

1. Shell whitish to pale brown, ornamented with pits arranged concentrically or tuberculate or concentrically ribbed 2
– Shell different 3

---

[1] Three related living genera are not included. They are *Oncocypris, Oncocypria* and *Pseudocypretta.* The first two are usually synonymized (*Oncocypris* is the senior synonym). *Oncocypris* has a distinctive pustulose surface ornament, the inner lamella bears characteristic lunettes and the maxillule 3rd lobe has 4 Zahnborsten. It well merits the separate subfamilial status already accorded to it by modern researchers, viz. Oncocypridinae De Deckker 1979.

2. Shell whitish, ornamented with pits arranged concentrically, or tuberculate; right valve margin smooth; cleaning leg (P3) with terminal pincer (Zange) ..... *Zonocypris*
– Shell pale brown, concentrically ribbed; right valve margin denticulate and bearing midventrally a small boss; cleaning leg (P3) simple terminally, without a pincer (Zange) ..... *Neozonocypris*
3. Shell subovate 4
– Shell different 5
4. Right valve ventromarginally tuberculate and overlapping left valve ventrally ..... *Cypridopsis*
– Right valve smooth ventromarginally, left valve overlapping right valve ventrally ..... *Neocypridopsis*
5. Shell subreniform or subtrapezoid, inner lamellae broad anteriorly and posteriorly, antennal natatory bristles reduced or well developed 6
– Shell of different shape, inner lamellae broad anteriorly but narrow posteriorly, antennal natatory bristles reduced or well developed 7
6. Shell subreniform, antennal natatory bristles reduced ..... *Kapcypridopsis*
– Shell subtrapezoid, antennal natatory bristles well developed ..... *Notiocypridopsis*
7. Shell subquadrate, antennal natatory setae well developed 8
– Shell subtriangular or subrectangular, antennal natatory setae reduced ... 9
8. Male clasping palps elongate, hemipenis with anterior lobe upturned ... *Plesiocyopridopsis*
– Male clasping palps normal, hemipenis with anterior lobe downturned . *Sarscypridopsis*
9. Shell subtriangular, furca absent or reduced, maxillar epipod present (with 2–5 Strahlen) ..... *Cavernocypris*
– Shell rectangular, furca powerful (for a cypridopsine), maxillar epipod absent ..... *Austrocypridopsis*

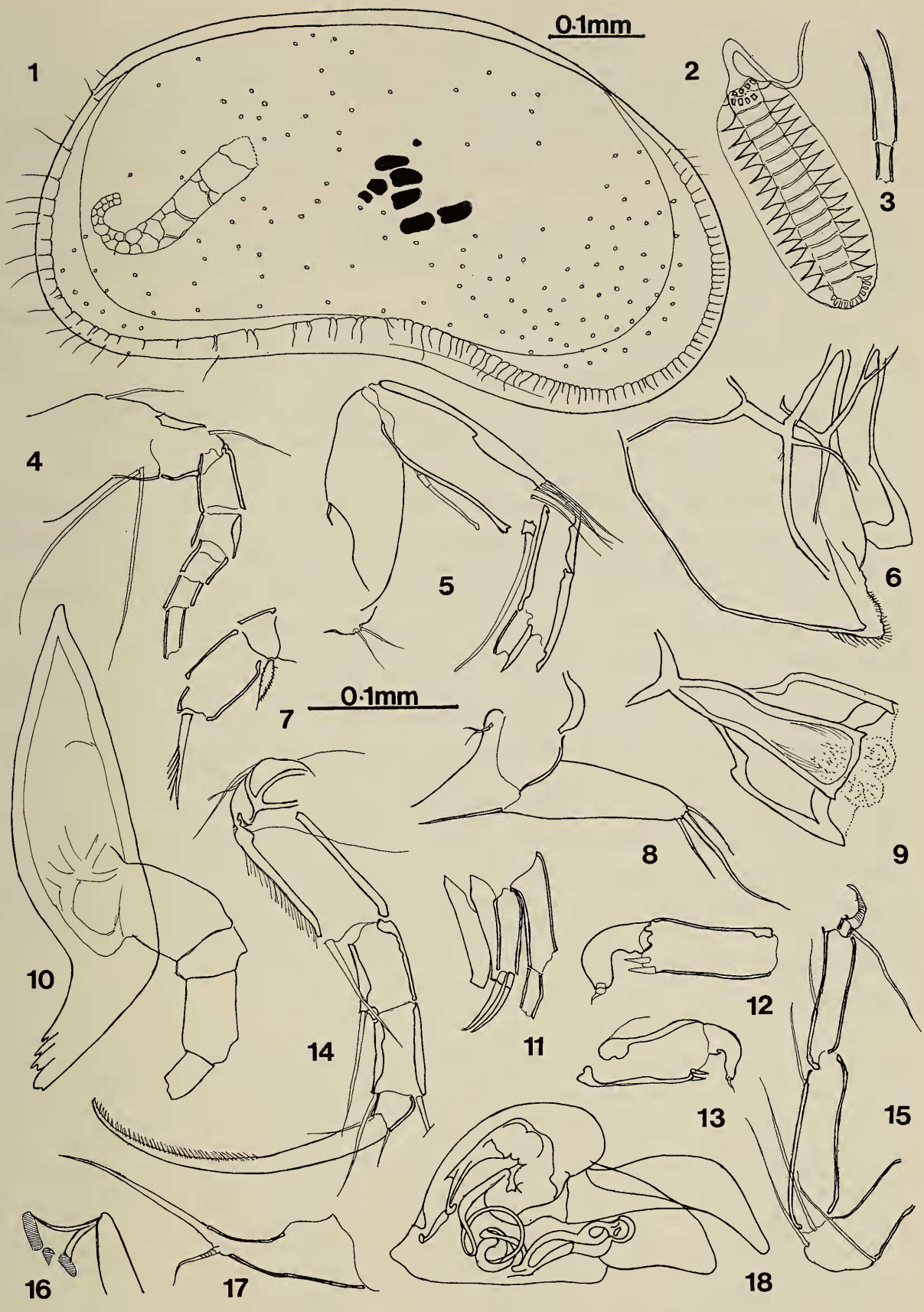
Austrocypridopsis terrilli, new species
Figs. 1–18

Etymology.—For Mr. P. Terrill who collected the material.

Description.—Shell whitish to cream-colored, medium-sized (length about 0.75 mm). In lateral view subrectangular, smooth, adorned with scattered fine hairs; anterior broadly rounded; dorsum relatively straight and sloping backwards; posterior broadly subtruncate; venter inflexed medially; right valve slightly larger than left valve; greatest height anteromedial and about half the length. In dorsal view, regularly subelliptical; greatest breadth medial and about 45% the length. Inner lamellae moderately broad anteriorly, narrower ventrally and posteriorly;

Pseudocypretta has a smooth shell, the inner lamella bears radial septa (in the right valve only), the maxillule 3rd lobe has 2 Zahnborsten, the furca is reduced as in other cypridopsids. Because the shell bears radial septa, this genus is considered to be transitional to the family Cyprettidae, in which all known genera have such septa. On these grounds, *Pseudocypretta* likewise merits its own subfamily, herein named Pseudocyprettinae, new subfamily.

Three fossil genera also are not included. They are *Obliquopsis, Curvopsis* and *Cavernopsis,* all described by Malz (1977) who differentiates them from the living Cypridopsinae in his paper.



Figs. 1–18. *Austrocypridopsis terrilli*. 2–6, 12–18, male holotype AM P31528; 1, 7–11, female paratype AM P31527. Internal lateral view female left valve; 2, Zenkers Organ; 3, Maxillule palp segments; 4, Antennule; 5, Antenna; 6, Labrum; 7, Mandible endopod, with β and γ bristles; 8, Maxillar (P1) endopod; 9, Labium; 10, Mandible coxale, basis and endopod segments; 11, Maxillule palp and lobes, with Zahnborsten; 12, Right maxillar palp; 13, Left maxillar palp; 14, Walking leg (P2); 15, Cleaning limb (P3); 16, Chitinous mandibular supports with mandibular scars (note how short these supports are); 17, Furca; 18, Hemipenis. Magnifications: Fig. 1, ×280; Figs. 2–18, ×450.

line of concrescence narrow anteriorly and posteriorly, broadening medioventrally; radial pore canals short and straight; normal pore canals numerous, concentrated anteriorly and ventrally, scattered dorsally, with relatively few medially on each valve, of simple rimmed type; muscle scars cypridopsid, comprising 4 large adductors (the posterior adductor divided), 2 large mandibulars, a small, upper, frontal scar and several dorsal scars (the latter not illustrated); hinge a simple ridge and groove. Spermatic vesicles of male looped posteriorly and anteriorly; ovigerous duct of female J-shaped, the arch of the J being posteroventral, and extending from the posteroventral region to just behind and above the adductor scars. Eye naupliar, eyecups fused.

Antennule 7-segmented; length ratios of segments 35:20:18:11:11:9:14; dorsal/ventral chaetotaxy of segments 1/2, 1/0, 1/0, 2/2, 2/2, 3/2, and 3 (or 4) terminal bristles. Antennal coxa bearing 3 bristles (1 proximal and 2 ventrodistal); basis without bristles; exopod the normal small basal plate with 1 long and 2 short bristles; endopod 3-segmented; length ratios of endopod segments 12:8:nearly 3; first endopod segment with long ventroproximal sensory bristle, 5 reduced "natatory" bristles dorsodistally (4 equally long, one shorter), and long ventrodistal bristle; chaetotaxy of second segment normal; 4 terminal claws, in males one of these more slender and barbate (the normal sexual dimorphic character). Labrum pointed anteroventrally. Detail of rake-like organs could not be observed, but these are certainly present. Mandible coxa powerful; epipod with 5 Strahlen plus one small bristle; chaetotaxy of basis and endopod segments includes a slender α bristle, plump β bristle and long γ bristle with spiky hairs. Maxillule epipod with 15 Strahlen and 4 downwards pointing bristles; both segments of palp elongate; third lobe with 2 smooth Zahnborsten. Maxilla (P1) endopod a simple lobe with 3 terminal bristles in female, modified in male as a clasping palp, rather similar on both sides; epipod absent. Walking leg (P2) normal; endopod segments with rather long ventrodistal bristles, terminal claw powerful. Cleaning limb (P3) with small terminal segment. Furca relatively powerful; proximally broad, terminating in single strong claw, with small annulated bristle on lower margin of ramus near base of claw. Chitin supports not observed. Hemipenis as illustrated. Zenkers Organ with 14 whorls.

Dimensions

	Length	Height	Breadth
1. Adult female	0.76 mm	0.38 mm	0.34 mm
2. Adult female	0.78 mm	0.38 mm	0.34 mm
3. Adult female	0.76 mm	0.40 mm	0.34 mm
4. Adult female	0.76 mm	0.40 mm	0.34 mm
5. Adult female	0.76 mm	0.40 mm	0.34 mm
6. Empty female LV	0.74 mm	0.38 mm	—
7. Juvenile female	0.70 mm	0.36 mm	0.30 mm
8. Adult male (holotype)	0.74 mm	0.38 mm	0.32 mm
9. Juvenile male	0.66 mm	0.34 mm	0.26 mm

Acknowledgments

I am grateful to Dr. J. K. Lowry, Curator of Crustacea, The Australian Museum, for suggesting that I look at the material and providing bench space and laboratory facilities during the May 1980 International Crustacean Congress at the Museum. Mrs. M. Nichol typed the paper.

Literature Cited

Hartmann, G. 1964. Asiatische Ostracoden.—Internationale Revue der Gesamten Hydrobiologie, Systematische Beihefte 3:1–155.

Lofthouse, P. 1967. Cladocera, Ostracoda, and freshwater Copepoda.—B.A.N.Z.A.R.E. Reports, Ser. B (Zollogy, Botany) 8(7):141–144.

Malz, H. 1977. Cypridopsine Ostracoden aus dem Tertiar des Mainzer Beckens.—Senckenbergiana Lethaea 58(4/5):219–261.

McKenzie, K. G. 1972. Results of the speleological survey in South Korea 1966 XXII. Subterranean Ostracoda from South Korea.—Bulletin of the National Science Museum, Tokyo 15(1):155–166.

Schornikov, E. I. 1980. Ostracodes in terrestrial biotopes.—Zoologicheskii Zhurnal 59(9):1306–1319 [in Russian].

Smith, W. A., and R. L. Sayers. 1971. Entomostraca. *In* E. M. van Zinderen Bakker Sr., J. M. Winterbottom, R. A. Dyer (Eds.), Marion and Prince Edward Islands pp. 361–372. A. A. Balkema: Cape Town.

Riverina College of Advanced Education, Wagga Wagga, New South Wales, Australia.